

# **Thermohaline changes in waters of the eastern Gulf of Cadiz.**

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In the sub-basin that connects the Atlantic Ocean and the Mediterranean Sea, the thermohaline changes and the variability in their waters have been little studied. Perhaps, this has been partly due to the scarce availability of time series of in-situ data, in particular as regards the study of the seasonal variations, given the reduced availability of winter observations.

Since 2009, the Cadiz Center of the Spanish Institute of Oceanography (IEO) has been sampling along three standard hydrographic sections perpendicular to the coast as a part of the Gulf of Cadiz Ocean Time-Series Study (GoCATS). With the aim to making progress in the study of the thermohaline changes and their variability, we have been focused on one of these hydrographic sections, which have been carried out at least three times per year.

In order to analyze the temperature and salinity variations in the water column, as well as, the processes that drive them, we have applied the method proposed by Bindoff and McDougall (1994) in this section. According to this method, the thermohaline changes at isobaric levels (isobaric change) can be decomposed in vertical displacement of the isopycnals (heave) and changes along isopycnals (isopycnal change).

The above mentioned, combined with the study of the hydrography of grounds in the eastern Gulf of Cadiz based on 2005-2013 near-bottom CTD observations (Bellanco & Sánchez-Leal (Submitted November 2013)), and the analysis of the variations in the transport of the GoCATS section (on going), will enable us to a deeper understanding of seasonal and inter-annual variations of the thermohaline properties in waters of the Gulf of Cádiz.